PLANTAE COLOMBIANAE. — III

Investigationes Specierum *Saurauiae:* Locus Primus.

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As a result of preliminary studies towards a revision of the American species of *Saurauia*, I have found it advisable to present the following notes on new or otherwise interesting species from Colombia.

Most of the classical collections of New World species of *Saurauia* are preserved in European herbaria. These are at present unavailable for study. For this reason, I have thought it valuable to call attention to recent and ample collections which have either been compared with authentic material or which have been critically determined.

It is with pleasure that I thank Miss Inés de Zulueta and Mr. Gordon W. Dillon for their beautifully executed drawings of several of the new species herein described.

Saurauia anolaimensis R. E. Schultes et H. García-Barriga sp. nov.

Arbor parva et pulcherrima, usque ad 5 m. alta. Rami lignosi strigillosique cum pilis ferrugineis 6 mm. longis densissime obtecti. Folia obovata, petiolata, firme papyracea, apice brevissime acuminata, basi subcuneata vel subrotundata, margine minute serrulata, 13.5-17 cm. longa, 5.5-7 cm. lata; infra cinereo-viridia, dense strigillosa (tactu aspera), nervis lateralibus undecim ad quattuordecim, non elevatis, densissime strigillosis ferrugineisque, supra atroviridia, aspero- hirsuta cum pilis aliquid subhamulatis, nervis medianis lateralibusque densissime strigillosis, non elevatis. Petioli densissime strigillosi, 2-2.5 cm. longi, 2 mm. in diametro. Pedunculi strigosi, ferruginei, 11-15 cm. longi. Inflorescentiae pauciflorae, pedicellis strigillosis usque ad 2 cm. longis. Bractea pedicelli primarii subtendens foliolacea, magna, strigillosa, elliptica, margine integra vel subsetosa, apice acuta, basi cuneata usque ad 2.5 cm. longa, 4-5 mm. lata; bractea pedicelli secundarii subtendens linearis, 7 mm. longa, 1 mm. lata. Flores magni, pul-

cherrimi, colore albo-flavi, in diametro 2 cm. Sepala quinque, inaequalia; duo exteriora aliquid coriacea, ovata, apice acuta, margine integra, extus omnino dense strigillosa, intus glabra vel puberulenta, 9 mm. longa, 6 mm. lata; tria interiora membranacea, rotundata, basi constricto-stipitata, margine integra extus glabra sed cum carina pilorum mediana conspicua, intus glabra, 7 mm. longa, 8 mm. lata. Petala quinque, alba vel flava, membranacea, ovata, apice rotundata, basi brevi stipitata, margine integra, utrinque glabra, basi prope marginem pulverulenta, usque ad 10 - 12 mm. longa, 8 mm. lata. Stamina plus minusve viginti. Antherae conspicuae, flavae, 3 - 5 mm. longae, versatiles. Staminum filamenta 4 mm. longa, basi densissime barbata, albis cum pilis lanosis. Ovarium ovoideum, glabrum, in diametro 2 - 3 mm., nigrum. Styli quinque, carnosi, glabri, subsulcati, 1.5-2 mm. longi. Fructus ignotus.

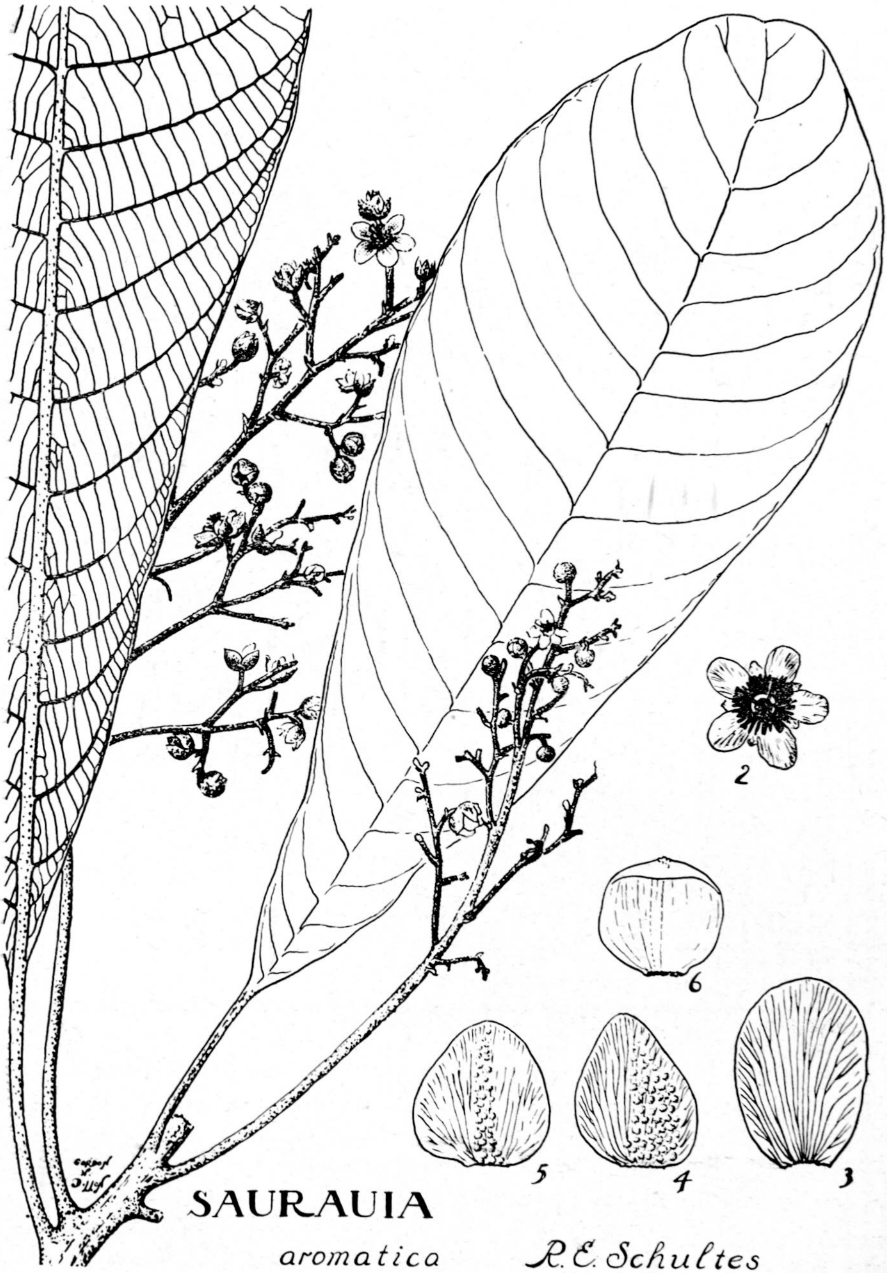
COLOMBIA: Departamento de Cundinamarca, Municipio de Anolaima, carretera entre Anolaima y Cachipay, alt. 1800 - 2260 m., 5 octubre, 1940, *H. García - Barriga 8994.*

(TYPE in Herb. Nac. Colomb.; DUPLICATE TYPE in U. S. Nat. Herb.).

Saurauia anolaimensis is very similar to *S. excelsa* Willd. var. *xanthotricha* (Turcz). Busc., but is distinguished by its very conspicuous floral bracts. The bracts subtending the primary pedicels are foliolaceous in character. Among numerous minor floral and vegetative differences of note is the extremely large size of the flower with its very conspicuous petals.

Saurauia aromatica R. E. Schultes sp. nov.

Arbor parva, pulcherrima. Rami robusti, asperi, ferrugineo - scabridi, prope apicem plus minusve 1 cm. in diametro; ramuli similes sed minores, ferrugineo-subechinati. Folia amplissima, papyracea, oblanceolata, apice brevissime acuminata vel obtusa, basi longe attenuato-cuneata, margine integra vel subintegra, usque ad 40 cm. longa, 16 cm. lata plerumque longe petiolata, (petiolus usque ad 7 cm. longus, 4 mm. in diametro); lamina utrinque glabra, supra venis plus minusve septendecim haud prominentibus, subtus conspicuissime elevatis, rubro-fulvis, sparce strigillosis. Inflorescentiae foliis breviores vel subaequales, multiflorae; pedunculi pedicellique ferruginei, dense echinati atque minutissime pulverulento-puberulenti; bracteae minutae, lineares, siccae, plerumque usque ad 3 mm. longae. Flores pulcherrimi, aromatico-fragrantes, usque ad 1.5 cm. in diametro. Sepala quinque, valde inaequalia; duo exteriora coriacea, elliptica apice rotundata, margine integra, 7 mm. longa, 4 mm. lata, extus omnino



SAURAUIA

aromatica R. E. Schultes

1. flowering branch; 2. flower; 3. petal; 4, 5 and 6. sepals.

echinata spinulis crassis subhamulatis, minutissime pulverulentis, inter spinulas pulverulento-puberulenta, intus pulverulentissima; tria interiora crasso-membranacea, late ovata, apice valde rotundata, margine subintegra, 8 mm. longa, 6 mm. lata, utrinque pulverulenta, extus cum spinularum echinatarum carina mediana armata. Petala quinque, alba, membranacea, glabra, late rotundata, apice rotundata, margine obscure undulata, 9-11 mm. longa, 6-7 mm. lata. Stamina perconspicua, flava, circiter quinquaginta; antherae versatiles, 3 mm. longae; filamenta gracilia, basi densissime barbata. Ovarium globosum, 2.5 mm. in diametro, quinque cum stylibus (qui in maturitate 5 mm, longis et filamentosis sunt) liberis coronatum. Fructus ignotus.

COLOMBIA: Comisaría del Caquetá, Cordillera Oriental, vertiente oriental, Sucre, bosques entre 1000 y 1300 m. alt. "Arbusto, corola blanca", Abril 4, 1940, *J. Cuatrecasas 9105* (TYPE in U. S. Nat. Herb. 1796300; DUPLICATE TYPE in Herb. Nac. Colomb.); — Comisaría del Caquetá, Cordillera Oriental, vertiente oriental, bosques entre Sucre y La Portada, 1200-1350 m. alt. "Arbol, hoja purpúrea envés, corola blanca; estambres amarillos; aromática". Abril 5, 1940, *J. Cuatrecasas 9150* (U. S. Nat. Herb. 1796575 and 1796576, sheets 1 and 2; Herb. Nac. Colomb.).

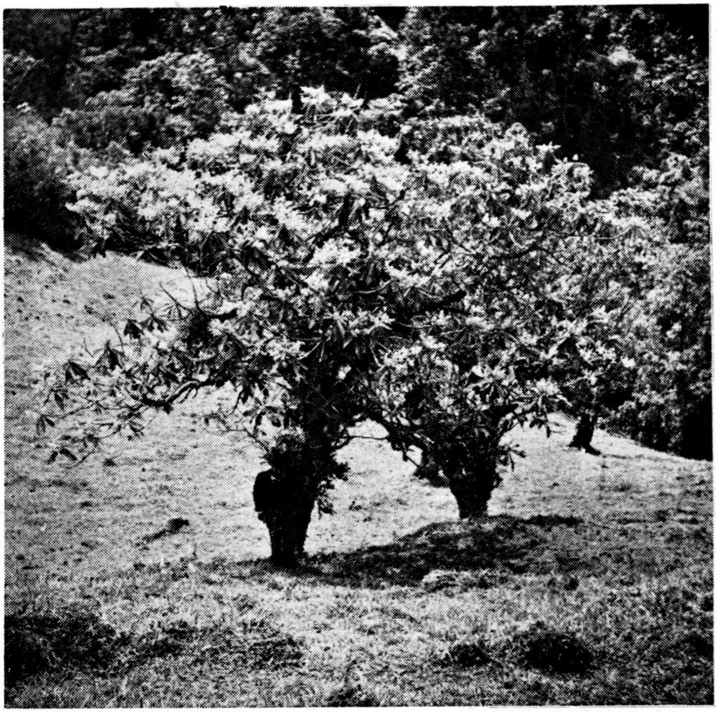
Saurauia aromatica, an extremely beautiful species, appears to be most closely related to *S. pulchra* Sprague of nearby regions. However, it is much larger in all its parts than *Saurauia pulchra* and is much more densely and coarsely echinate along the floral axes and on the outer surface of the sepals. The petals of *Saurauia aromatica* are rotund but often with undulating margins.

Saurauia brachybotrys Turczaninov in Bull. Soc. Nat. Moscou 31 (1858) 245.

Saurauia brachybotrys and its several varieties are apparently widespread in the western cordillera of central and southern Colombia and in Ecuador. The type of this species was collected at the foot of Mount Tolima *(Linden 972)*.

A critical study the descriptions given by Turczaninov and by Buscalioni has enabled me to determine *Schultes 3202* as unquestionably referable to *Saurauia brachybotrys.*

COLOMBIA: Comisaría del Putumayo, Valle de Sibundoy, Sibundoy, collados al norte del pueblo, alt. 2250 m. "Nombre kamsá: *jenuss*". Nombre castellano: *moquillo.* Fruit edible. Fruits abundantly in March and April. Left in clearing because of the value of its fruits and because it is a host to bees. Wood formerly used as kindling. Bark rasped and powder applied to sores to extract pus". February



Saurauia brachybotrys Turcz. A photograph of the tree from which the collection *R. E. Schultes 3203* was made; Sibundoy (Putumayo).

Photo: R. E. Schultes.

12, 1942, *Richard Evans Schultes 3203* (Econ. Herb. Oakes Ames; Herb. Gray; Herb. Nac. Colomb).

Departamento del Cauca, Popayán, *Lehmann 5537*. (U. S. Nat. Herb. Nº 1360223).

Comisaría del Putumayo, alta cuenca del Río Putumayo en el Valle de Sibundoy, extremo E. junto a San Francisco, 2200 m. "Arbol frecuente, pétalos blancos, anteras amarillas", 1 enero, 1941, *J. Cuatrecasas 11578*. (Herb. Nac. Colomb.).

Saurauia brachybotrys Turczaninov var. **macrantha** Buscalioni in Malpighia 25 (1912) 221, et 28 (1917) 31.

The center of distribution of this interesting variety of *Saurauia brachybotrys* appears to be the Department of Cauca.

COLOMBIA: Departamento del Cauca, entre Popayán y Puracé, Quebrada de la Filipilla, 2000 m. alt. "Arbol, corola blanca, pedúnculo y cáliz amarillentos", 10-VII, 1939 *E. Pérez-Arbeláez et J. Cuatrecasas*

5823 (Herb. Nac. Colomb.); - Departamento del Cauca, Popayán, Timbío, en Hatoviejo, bosque, 1800 m. alt. "Gran árbol, flor blanca", 14-VII, 1939, *E. Pérez-Arbeláez et J. Cuatrecasas 6091* (Herb. Nac. Colomb.);— Departamento del Cauca, cordillera occidental, Carpinterías, (bosque entre los cerros de Munchique y Altamira), 2400-2450 m. alt. "Arbol", 15-VII, 1939, *E. Pérez-Arbeláez et J. Cuatrecasas 6148* (Herb. Nac. Colomb.).

Saurauia caquetensis R. E. Schultes, sp. nov.

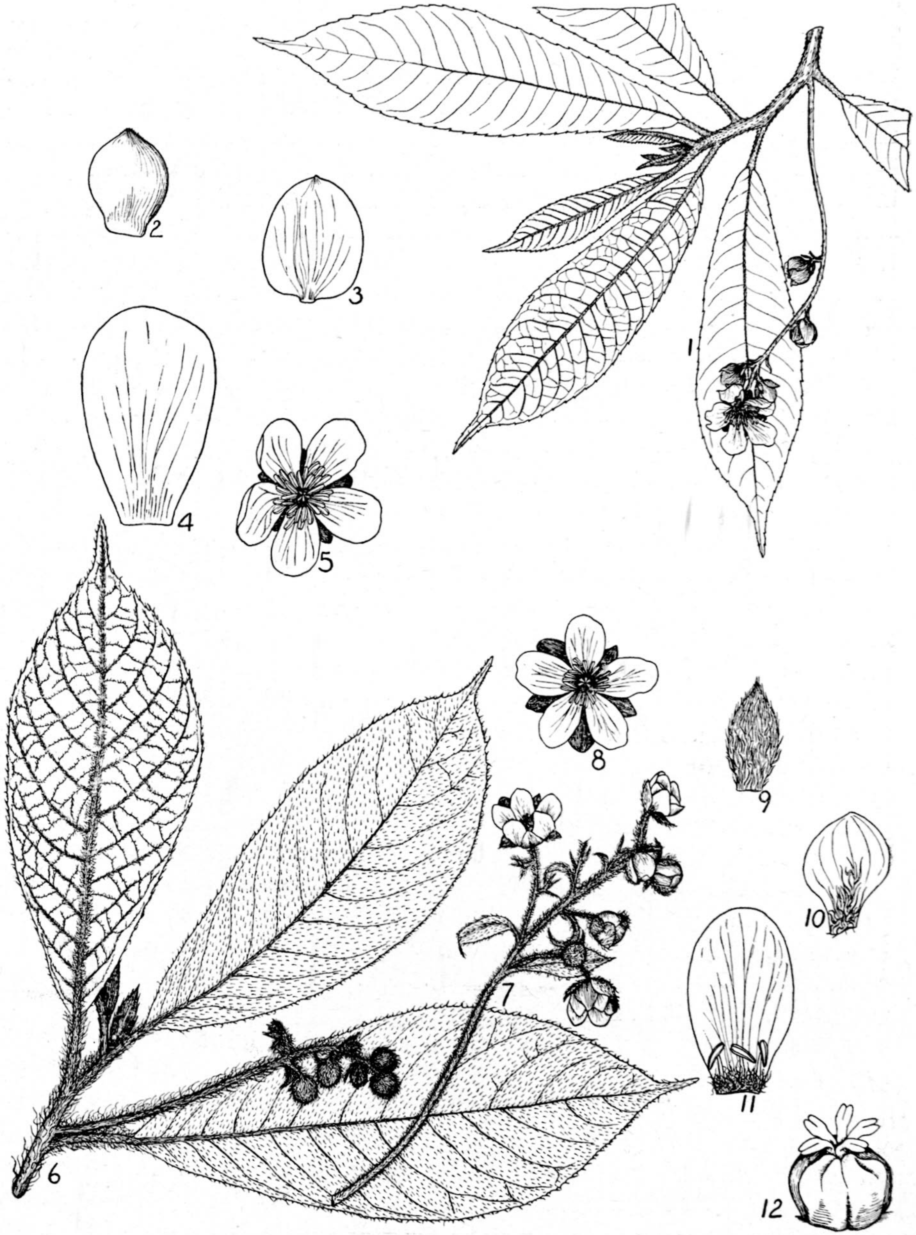
Arbor parva. Ramuli sparse setoso-hirsuti atque minute scabriusculi, fulvo cum cortice. Folia petiolata; lamina obovato-lanceolata, longe acuminata, basi subcuneata, subcoriacea, margine serrulata, utrinque glabra, plus minusve viginti nervis lateralibus, 9.5-11 cm. longa, 2.8-3.3 cm. lata, supra atroviridis et subnitida nervis cum setis sparsis scabridis, subtus fulvo-viridis, sine pilorum floccis in nervorum axillis, nervis dense atque minutissime subpapillatis. Petioli setoso-hirsuti, 1.2 - 1.5 cm. longi. Inflorescentiae usque ad octoflorae, foliis aequales vel longiores, gracillime pendentes, cum pedunculo usque ad plus minusve 17 cm. longae. Pedunculi graciles, 1.5 - 2 mm. in diametro, sparsim setuloso-hirsuti. Pedicelli similes, usque ad 4 mm. longi. Bracteae subconspicuae, lineares, 4-5 (raro usque ad 10) mm. longae, plerumque 1 mm. latae, scariosae, paucis cum setis. Sepala quinque, ovato-rotundata, membranacea, glabra, margine minute ciliata, exteriora duo 6-7 mm. longa, 5-6 mm. lata; interiora tria 10-11 mm. longa. Petala quinque, rotundato-subquadrangulata, alba, membranacea, glabra, 7-8 mm. lata. Stamina plus minusve triginta, basi densissime barbata, barba rubentibus cum pilis praedita. Staminum filamenta 4 mm. longa, basi aliquid tumida. Antherae versatiles, 3 mm. longae. Ovarium subglobosum, conspicue quinquelobatum, in barba celatum, plus minusve 3 mm. in diametro, stylibus quinquefidis crassis coronatum. Fructus ignotus.

COLOMBIA: Departamento del Huila — Comisaría del Caquetá, cordillera oriental sobre el filo divisorio, en Gabinete, 2300-2450 m. alt. "Arbusto; flor blanca". Marzo 21, 1940, *J. Cuatrecasas 8439* (TYPE in U. S. Nat. Herb.; DUPLICATE TYPE in Herb. Nac. Colomb).

The closest ally of *Saurauia caquetensis* in apparently *S. narcissifragrans,* from neighbouring regions. This relationship is discussed under *S. narcissifragrans*.

Saurauia chiliantha R. E. Schultes, sp. nov.

Arbuscula parva, usque ad 2.50 m. alta. Ramuli robusti, lignosi, glabrescentes, fusco-rubro cum cortice. Folia petiolata, papyracea, ellip-



Above: **Saurauia caquetensis** R. E. Schultes. 1. flowering branch; 2 and 3. sepals; 4. petal; 5 flower.

Below: **Saurauia anolaimensis** R. E. Schultes et H. García-Barriga. 6. flowering branch; 7. inflorescence; 8. flower; 9 and 10. sepals; 11. petal and stamens; 12. ovary and styles.

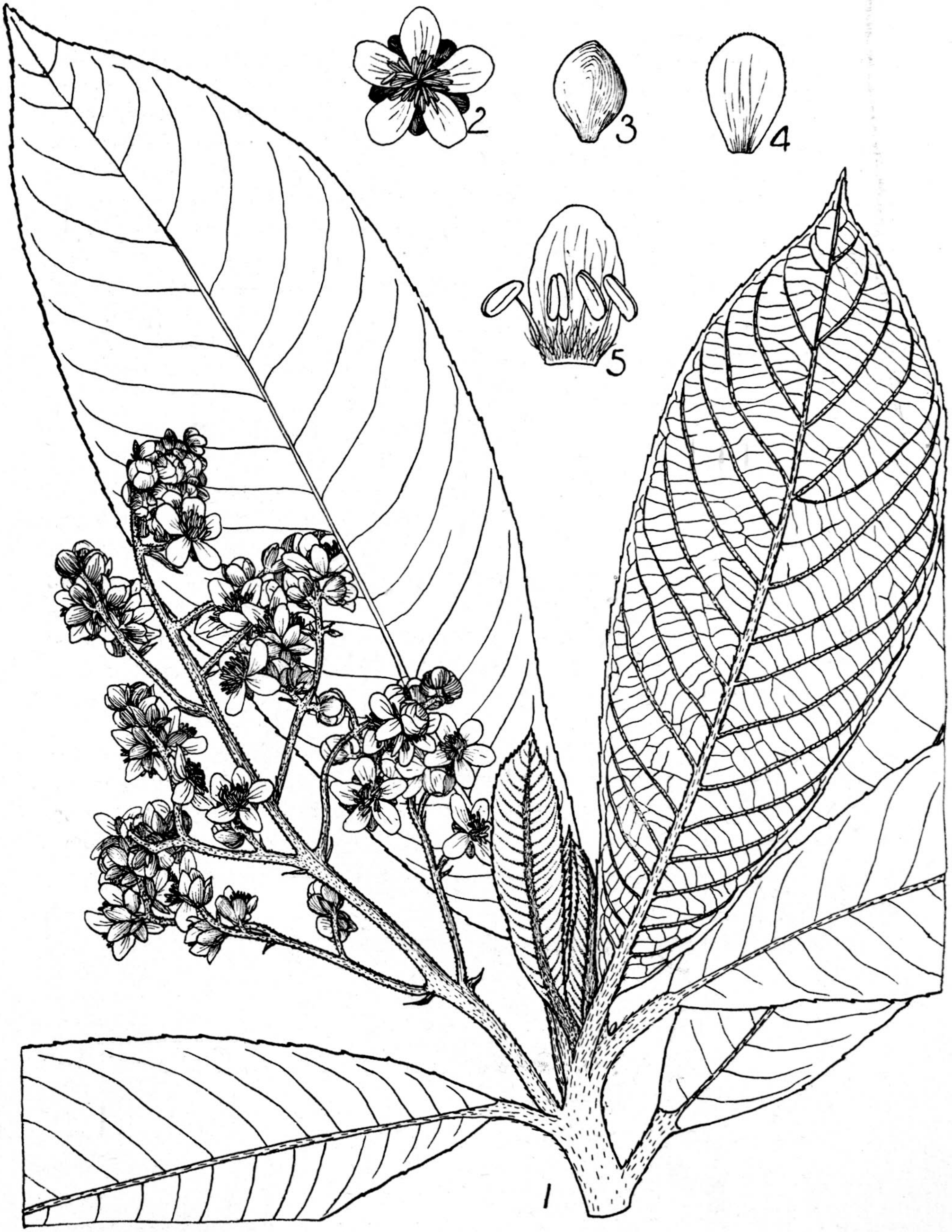
tico-oblanceolata, apice acuta, basi subcuneata, margine pseudodenticulata cum prolongatorum venorum secundorum spinulis subhamulatis et firmis conspicue praedita, cum plus minusve viginti nervis lateralibus, 11 - 18 cm. longa, 3.5 - 5.5 cm. lata; supra atroviridia, glabra, subnitida, nervis sparcim et molliter strigillosis; subtus viridia pallida, densissime atque maxime minutissime stellato-pilosa, sine pilorum floccis in nervorum axillis, nervis prominenter elevatis. Inflorescentiae congestiflorae multifloraeque, foliis conspicue breviores, cum pedunculo usque ad 11 cm. longae. Pedunculi aliquid robusti, dense et minute scabro-strigillosi, colore ferruginei. Pedicelli brevissimi, usque ad 3 mm. longi, ferrugineo-strigillosi, Bracteae tria, inaequales, ellipticae, pilosae; duo minores 1.5 mm. longae, 0.5 mm. latae; major usque ad 3 mm. longa, 1.5 mm. lata. Flores parvi, albi, fragrantissimi, plus minusve 7 mm. in diametro. Sepala quinque, inaequalia; duo exteriora crasso-membranacea, ovato—rotundata (sepalum extremum apice subacutum, penultimum apice rotundatum), extus glabra vel pulverulenta, 3.5 mm. longa 3 mm. lata, margine apice minutissime ciliata; tria interiora membranacea, ovato—elliptica, apice rotundata, margine subirregularia et ciliata, extus glabra vel pulverulenta, usque ad 4 mm. longa, 3 mm. lata. Petala quinque, alba, membranacea, glabra, ovata, margine subundulata, apice rotundata aliquando laeviter bilobata, 5 mm. longa, 2.5 mm. lata. Stamina plus minusve duodeviginti, basi dense barbata. Staminum filamenta 2 mm. longa, basi aliquid tumida. Antherae versatiles, 2 mm. longae, flavae. Ovarium subglobosum, obscure quinquelobatum, glabrum, 1.5 mm. in diametro, cum stylibus quinque crassis brevibus coronatum. Fructus ignotus.

COLOMBIA: Departamento de Caldas: región del Quindío, entre Circasia y Pereira, cerca del Alto de "El Roble", 2200 m. alt. "Arbolito 2.50 m. alt.; fls. blancas muy olorosas", Agosto 16, 1941, *A. Dugand et R. Jaramillo 2988* (TYPE in Herb. Nac. Colomb., Nº 12036; DUPLICATE TYPE in U. S. Nat. Herb).

Saurauia chiliantha is apparently most nearly related to *S. strigillosa* Tr. et Planch. but is easily distinguished from this species by the exceedingly small flowers (which are borne in great profusion). There are vegetative differences to be noted in the character of the pilosity and in the leaf margins as well as floral differences in the sepals, petals and stamens. Both species are native to the same general region of the Quindio, in the Central Cordillera.

Saurauia echinosepala R. E. Schultes, sp. nov.

Arbor parva, usque ad 2,80 m. alta. Rami robusti, strigosi, fulvo cum cortice obscure striato. Ramuli similes sed minores. Folia ampla,



Saurauia chiliantha R. E. Schultes. 1. flowering branch; 2. flower; 3 and 4. sepals; 5. petal and stamens.

coriacea, oblanceolata, apice brevissime acuminata, basi rotundata vel cuneata, margine serrulata, usque ad 30 cm. longa, 10 cm. lata; lamina supra atroviridi, glabra, nervis haud impressis, subtus viridi nitidaque, glabra, plerumque plus minusve viginti nervis prominentibus et elevatis, vix strigillosis vel glabris. Petioli robusti, 3-5 cm. longi. Inflorescentiae comparate pauciflorae, foliis breviores, cum pedunculis usque ad 21 cm. longae; bracteae minutae lineares, usque ad 4 mm. longae, strigillosae. Flores magni pulcherrimique, usque ad 2.8 cm. in diametro. Sepala quinque, inaequalia; duo exteriora subcoriacea, elliptica, apice obtusa, margine integra, extus omnino dense echinata, crassis cum spinulis subhamulatis et apice potius recurvatis, minutissime puberulentis, inter spinulas papillosa, intus minutissime granuloso-papillosa, 7 mm. longa, 4-5 mm. lata; tria interiora majora, membranacea, ovata, apice rotundata, margine irregulariter subundulata, extus omnino minute papillosa, cum spinularum echinatarum hamulatarumque carina mediana armata, intus minute papillosa, 9 mm. longa, 6 mm. lata. Petala quinque, membranacea, alba, late rotundata, 9 mm. lata. 11 mm. longa, margine subintegra vel minute et irregulariter subundulata. Stamina plus minusve quadraginta, conspicua, cum antheris flavis usque ad 3 mm. longis. Ovarium subglobosum, circiter 3 mm. in diametro, in staminarum barba densa albaque celata. Styli quinque, crassi, 1.5 mm. longi sed in maturitate probabiliter longiores filamentosique. Fructus ignotus.

COLOMBIA: Departamento de Caldas, entre La Gabriela y La Línea (Carretera del Quindío), 2200-2600 m. alt. "Arbusto de 3 metros, flores blancas". 21 - VII - 1939, *E. Pérez-Arbeláez et J. Cuatrecasas 6473.* — (TYPE U. S. in Nat. Herb. 1774961; DUPLICATE TYPE in Herb. Nac. Colomb.).

Saurauia echinosepala is apparently most closely related to *S. strigillosa* Tr. et Planch. of the same general region. It differs in being much larger, in having very broadly rounded and marginally minutely subundate petals, and having twice as many stamens. There are also other lesser differences. *Saurauia echinosepala* as indicated by its specific epithet, is very conspicuously echinate on the outer surface of the sepals. *Saurauia echinosepala* bears a more distant relationship to *Saurauia Loseneriana* of Ecuador.

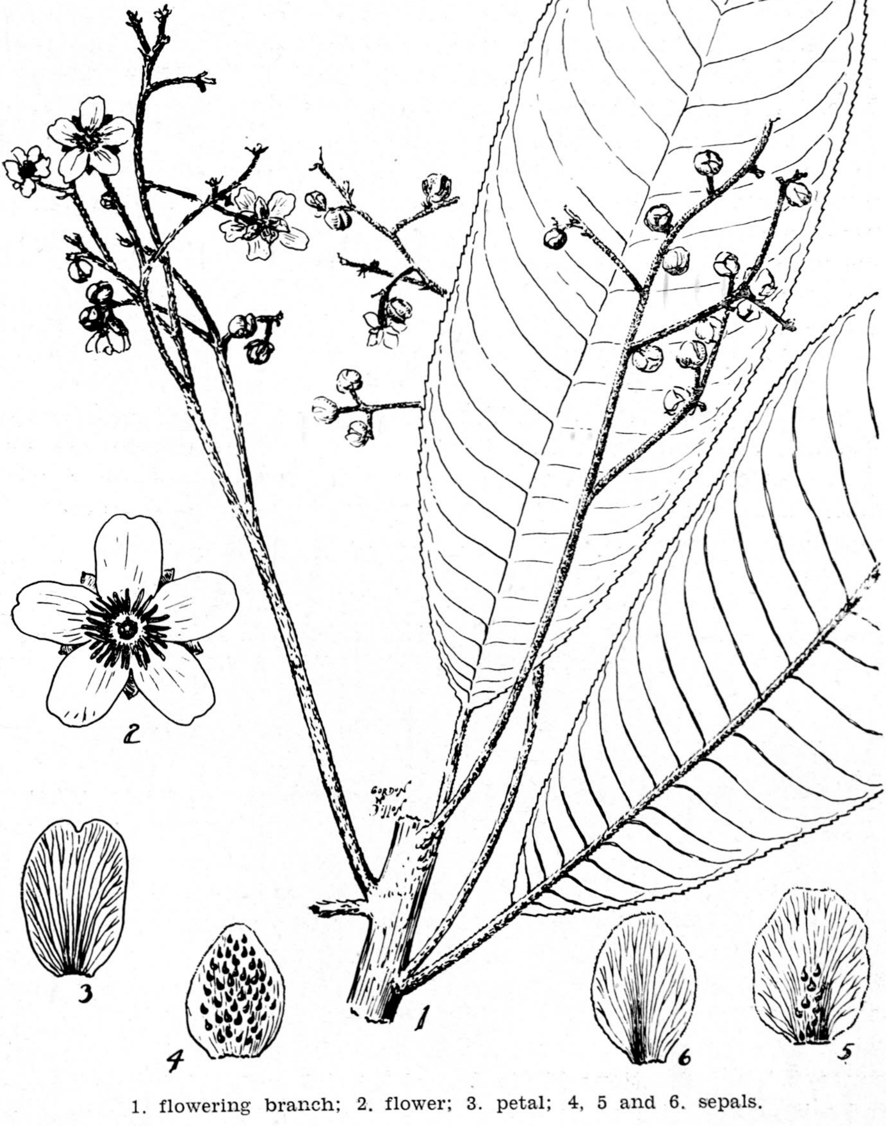
Saurauia excelsa Willdenow in Ges. Naturf. Fr. Neue Schr. 3 (1801) 407.

This attractive species of western Venezuela and the adjacent parts of Colombia is somewhat variable in leaf size, but the shape and indument of the leaves as well as the floral characters are constant. The variation in leaf size may be due to the great altitudinal range

SAURAUIA

echinosepala

R. E. Schultes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GORDON W. DILLON

1. flowering branch; 2. flower; 3. petal; 4, 5 and 6. sepals.

of this species. The collection *Killip & Smith 19024* represents a form with leaves which are narrower and smaller than those of the type specimen, a photograph of which I have examined; this collection was compared with authentic material at Kew. The type of *Saurauia excelsa* was collected near Caracas, Venezuela, by Moritz.

COLOMBIA: *Moritz sin. num.,* no definite locality.—Departamento de Santander, Vicinity of Charta, alt. 2000 m., forest. "Shrub or small tree, 12-12 ft. high, petals white".—Feb. 1-11, 1927, *E. P. Killip et Albert C. Smith 19024* (U. S. Nat. Herb).

Departamento de Santander, Quebrada de Pais. north of La Baja, alt. about 3200 m., dense forest. "Tree 15-20 ft.; sepals pale green; petals white; anthers yellow". — Jan 31, 1927, *E. P. Killip et Albert C. Smith 18825* (Herb. Gray).

Saurauia excelsa Willdenow var. **xanthotricha** (Turczaninov). Buscalioni in Malpighia 25: 7 (1912) 232.

This variety of western Venezuela and eastern Colombia is particularly striking because of its rich reddish-brown pubescence. The type was collected near Caracas by Linden. The collection *Killip & Smith 18322* was compared with authentic material in Berlin.

Buscalioni's treatment of Turczaninov's *Saurauia xanchotricha* as a variety of *S. excelsa* seems to be the most logical disposition of the concept, for other than in the extraordinary coloration of the pubescence, the variety agrees strikingly in all characters with *S. excelsa.*

COLOMBIA: Departamento de Santander, Vicinity of La Baja, alt. 2800 meters. "Shrub 8-10 ft; outer sepals pale green with reddish hairs at center without, with a green stripe at center within; petals pure white, filaments yellow-white; anthers yellow".—Jan 14-31, 1927, *E. P. Killip et Albert C. Smith 18322* (Herb. Gray; U. S. Herb. 1353749).

Saurauia Humboldtiana Buscalioni in Malpighia 25 (1912) 424.

This is apparently a rather widespread species in Colombia. It seems to be very variable in the size of the leaves, but the shape and pubescence of the leaves and the floral characters are surprisingly constant for such a wide-ranging species. I have examined the following collections which are referable without question to Buscalioni's concept. The collections *Killip & Smith 19103* and *19480* were compared with authentic material of *Saurauia Humboldtiana* at Kew by A. C. Smith.

COLOMBIA: Departamento de Santander, Vicinity of California, alt. 3000 m. "Tree 12-15 ft. Petals white, anthers yelllow. Open hillsides". Jan. 11-17 1927, *E. P. Killip et Albert C. Smith 16933*.

Departamento de Santander. Vicinity of Charta, alt. 2000-2600 m. "Shurub 10-12 ft. Petals white, stamens yellow. Thicket".—Feb. 1-11, 1927, *E. P. Killip et Albert C. Smith 19103*.

Departamento de Santander, Vicinity of Tona, alt. 1900-2100 m. "Woods. Shrub 5-8 ft". Feb. 17, 1927, *E. P. Killip et Albert C. Smith 19475*.

Departamento de Santander, Vicinity of Tona, alt. 1900-2100 m. "Woods. Shrub 8-12 ft. Petals and filaments white, anthers yellow".— Feb. 17, 1927, *E. P. Killip et Albert C. Smith 19480*.

Saurauia laevigata Triana et Planchon in Ann. Sc. Nat., Ser. 4, 18 (1862) 267.

In the Herbario Nacional Colombiano there is a colletion of *Saurauia laevigata* from Tolima which is an excellent match for the type. The type was collected in the Departamento del Tolima, on the eastern slope of the Quindío.

COLOMBIA: Departamento del Tolima, El Fresno, "Alto del Aguila", 1800 m. alt. "Arbol 7 m. Flores blancas. Tallos leñosos y delgados". Diciembre 3, 1939, *H. García-Barriga 8227* (Herb. Nac. Colomb.).

Saurauia narcissifragrans R. E. Schultes, sp. nov.

Arbor parva, silvatica, fragrantissima, usque ad 6.70 m. alt. Ramuli graciles, setoso-hirsuti primo sed cito subglabrescentes, fulvorubro cum cortice. Folia brevipetiolata, firme chartacea, obovato-lanceolata, apice acuminata, basi cordata, margine pseudodenticulata cum prolongatorum venorum secundorum spinulis subhamulatis et firmis conspicue praedita, maturitate 15 - 18 cm. longa, 4.5 -5 cm. lata, cum plus minusve duodeviginti venis; supra atroviridia, scabra cum pilis atque setulis remotissime et sparsim armata, venis rubro-hirsutis; subtus viridia pallida, glabra, sine pilorum floccis in venorum axillis, nervis rubris et setoso-hirsutis. Petioli hirsuti, usque ad 1 cm. longi. Inflorescentiae foliis aequales vel raro breviores, multiflorae, cum pedunculo usque ad 18 cm. longae. Pedunculi robusti, conspicue et dense rubrohirsuti, usque ad 1.5 mm. in diametro. Pedicelli similes, 5 mm. vel raro usque ad 10-12 mm. longi, 0.8 mm. in diametro. Bractae subconspicuae, lineares. 2-4 mm. longae, plerumque 1 mm. latae, scariosae. Flores pulcherrimi. fragrantissimi, albi, plerumque 1.5 cm. in diametro. Sepala

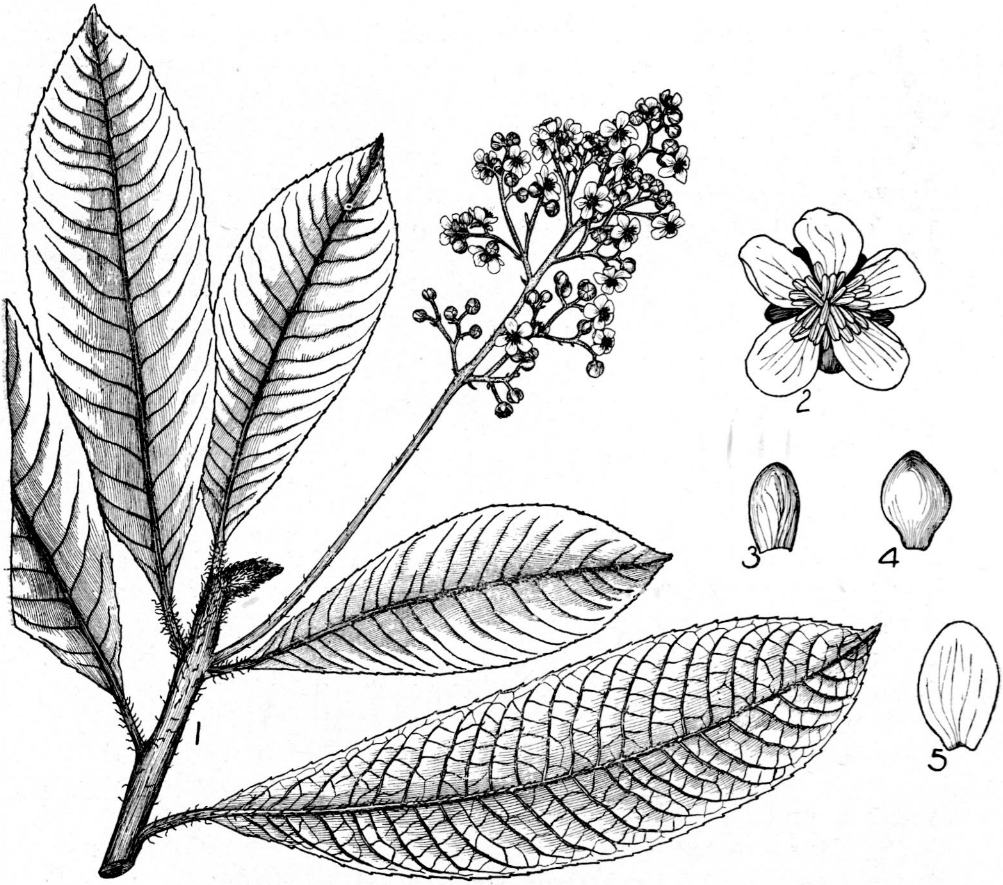
quinque, inaequalia; duo exteriora crassa, elliptica, apice acuta vel subacuta, margine integra, 5-6 mm. longa, 3 - 3.5 mm. lata, extus maxime perspicue echinata cum spinulis hamulatis crassis rubris usque ad 0.8 mm. longis praedita, inter spinulas pulverulenta, intus minutissime pilosa vel pulverulenta; tria interiora membranacea, ovata, apice rotundata, margine integra , 5.5 mm. longa, 4 - 4.5 mm. lata, extus densissime puberula et cum spinulorum hamulatorum carina media armata, intus glabra. Petala quinque, membranacea, alba, glabra, ovata, margine subundulata, 6 mm.. longa, 5 mm. lata. Stamina plus minusve viginti-quattuor, basi densissime barbata. Staminum filamenta gracilia, 3 mm. longa. Antherae conspicuae, versatiles, flavae, 2.5 mm. longae. Ovarium subglobosum, obscure quinquelobatum, 2 mm. in diametro, glabrum, in barba celatum, quinque cum stylibus filamentosis fulvis usque ad 5 mm. longis, apice in stigmate laeviter tumidis coronatum. Fructus ignotus. Planta ab regionibus agrestibus "moquillo" nominatur.

COLOMBIA: Departamento del Huila, Río Villalobos, between Río Suazita and Quebrada Guayabo, dark rain-forest. Alt. about 1400 m. Small tree 15-18 feet tall; peduncles prominently reddish; flowers white, excessively fragrant. January 1940, *R. E. Schultes et M. Villarreal 5169* (TYPE in Econ. Herb. Oakes Ames, Harvard Bot. Mus; DUPLICATE TYPE in Herb. Nac. Colomb.) ; - ibid. Jan. 1943, *R. E. Schultes et Villarreal 5317* (Herb. Gray, U. S. Nat. Herb.; Herb. Nac. Colomb.)

Saurauia narcissifragrans appears to bear closest relationship to *S. caquetensis,* differing in size and shape of the leaves, character of the leaf margins, size of the flowers, shape and size of the sepals, number and size of the stamens and other characters. The Caquetá species and *S. narcissifragrans* are native to neighbouring mountain ridges.

Saurauia portachuelensis R. E. Schultes, sp. nov.

Arbor parva vel frutex. Folia parva; foliorum lamina coriacea, lanceolato-elliptica, apice valde acuminata, basi rotundata, margine minute et remote serrulata, 18 - 24 cm. longa, 5 - 7 cm. lata; supra aliquid nitida, glabra, nervis dense strigoso-hirsutis cum pilis rubentibus. Inflorescentia foliis brevior, cum pedunculo 16 - 20 cm. longa. Pedunculus glabrescens, apice remotis cum pilis strigosis. Bracteae lineares, dense hispidulae, 4 mm. longae. Flores 1 - 1.3 cm. in diametro. Sepala quinque; tria exteriora glabra, ovata, apice obtusa, margine inflexa, circiter 3.8 mm. longa, 2 mm. lata, colore fulvo-aurea;



Saurauia portachuelensis R. E. Schultes. 1. flowering branch; 2. flower; 3 and 4. sepals; 5. petal.

duo exteriora glabra, ovata vel subrotundata, apice obtuso-rotundata, 4 mm. longa, 2.8 - 3 mm. lata, margine minutissime fimbrillifera. Petala quinque, membranacea, glabra, alba, elliptica, apice rotundata, 5 mm. longa, 3.7 mm. lata. Stamina plus minusve triginta, versatilia, basi barbata. Staminum filamenta gracilia, 2.8 mm. longa. Antherae bene conspicuae, circiter 2.8 mm. longae. Ovarium subglobosum, distincte quinquelobatum, glabrum, 1.8 - 2 mm. in diametro, quinque cum stylibus brevibus crassis coronatum. Fructus ignotus.

COLOMBIA: Comisaría del Putumayo, Cerro de Portachuelo, alt. 2750 m. Febr. 1941. *Fray Miguel de Ipiales 40.*—(TYPE in Econ. Herb. Oakes Ames). — Comisaría del Putumayo, alta cuenca del Río Pu-

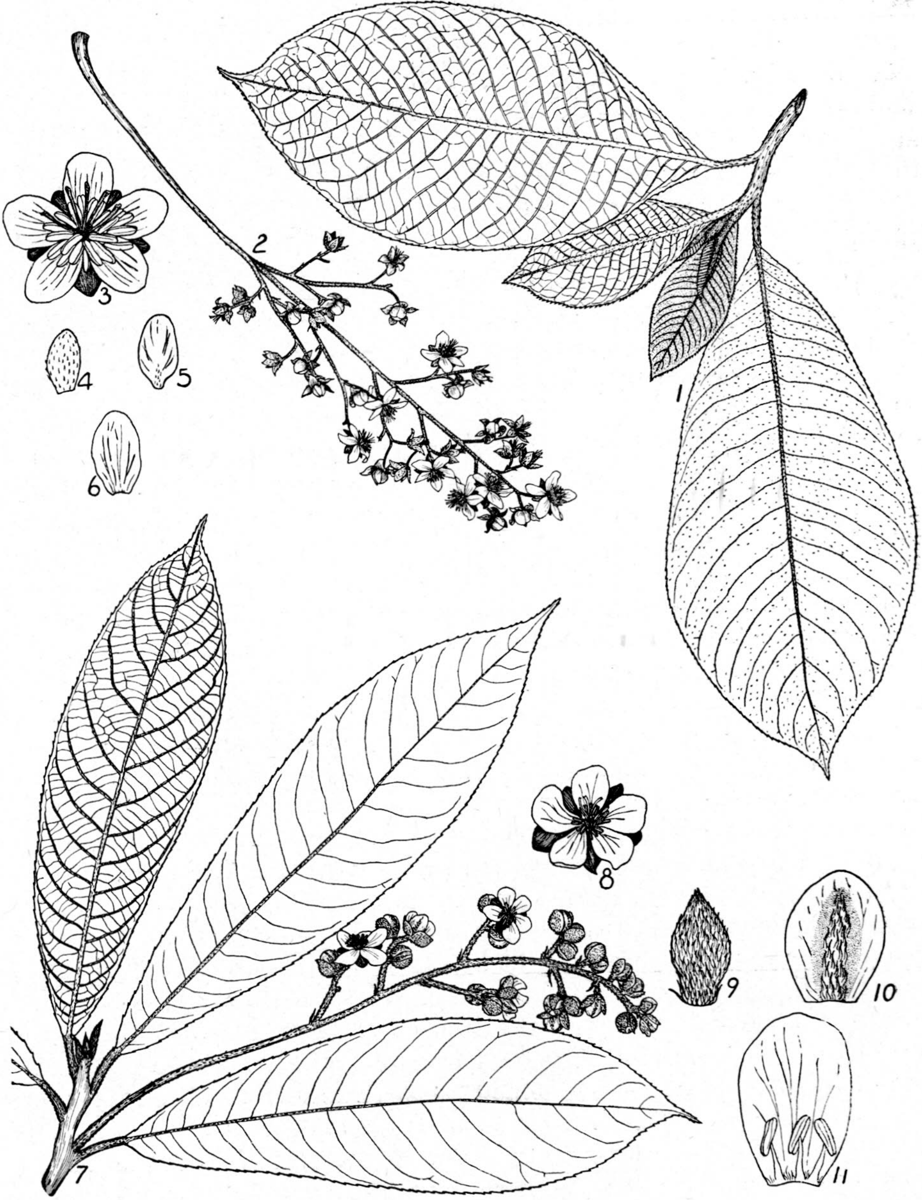
tumayo en el Valle de Sibundoy, bosque paramero en el filo de la Cordillera, La Cabaña, 2800 m. alt. "Arbusto; pétalos blancos, anteras amarillas, 2 enero 1941", *J. Cuatrecasas 11643* (Herb. Nac. Colomb.; U. S. Nat. Herb.).

Saurauia portachuelensis appears to have no close relatives. It is a beautiful species conspicuous especially on account of its profusion of very small flowers and the sparsity of pubescence in most parts of the plant. Its leaves are perfectly glabrous and glossy, excepting along the veins and, most striking of all, its sepals are glabrous. The flowers, very numerous and much smaller than is usual in the genus, are suggestive of *Saurauia Smithiana* Busc., an endemic of the isolated Santa Marta range in northern Colombia; the resemblance, however, is merely superficial, and there is no relationship between the two species.

Saurauia putumayonis R. E. Schultes et H. García-Barriga, sp. nov.

Arbor parva vel frutex. Folia parva, alterna, ovata et oblonga, petiolata, papyraceo-coriacea, margine serrulata, apice acuta, basi exigue rotundata vel subcuneata, 14.5 - 20 cm. longa, 7.3 - 9.5 cm. lata. infra strigillosa cum nervis lateralibus viginti ad viginti-tria, strigillosis et ferrugineis, supra atroviridia, ferruginea, cum nervis medianis elevatis. Petioli 12 - 22 mm. longi, 2 mm. in diametro, strigosi. Pedunculi strigosi ferruginei 16.5 - 19 cm. longi. Inflorescentiae plus minusve triginta-quinque-florae; pedicellis strigillosis usque ad 2 cm. longis, 1 mm. in diametro. Bracteae pedicelli primarii lineares, 3 mm. longae, membranaceae. Flores colore flavido-albae, in diametro 12 mm. Sepala quinque; tria exteriora papyracea, ovato-lanceolata, margine integra et maxime minutissime ciliata, intus glabra, extus echinata, 4.5 mm. longa, 2 mm. lata; duo interiora membranacea, apice rotundata, basi stipitata, margine integra, 5 mm. longa, 2 mm. lata. Petala quinque, flavido-alba, membranacea, ovata, apice rotundata, basi sessilia, margine integra vel obscure subundulata, 5-6 mm. longa, 3 - 3.5 mm. lata. Stamina plus minusve vigintiduo. Antherae perconspicuae, albae, 2.5 mm. longae.. Ovarium ovoideum, glabrum vel subglabrum, 1 - 1.5 mm. in diametro, flavum. Styli quinque, crassi, apice conspicue dilatati, in stigmate carnoso, 4 mm. longi, glabri. Fructus ignotus.

COLOMBIA: Comisaría del Putumayo; vertiente oriental de la Cordillera, entre Sachamates y San Francisco de Sibundoy, Planada



Above: **Saurauia putumayonis** R. E. Schultes et H. García-Barriga. 1. flowering branch; 2. inflorescence; 3. flower; 4 and 5. sepals; 6. petal.

Below: **Saurauia narcissifragrans** R. E. Schultes. 7. flowering branch; 8. flower; 9 and 10. sepals; 11. petal and stamens.

de Minchoy, alt. 2100 m., Dic, 30, 1940, *J. Cuatrecasas 11431.*—(TYPE in Herb. Nac. Colomb.; DUPLICATE TYPE in U. S. Nat. Herb.).

Saurauia putumayonis appears to bear no close relationship with any other species of southern Colombia and Ecuador. It resembles *S. pulchra* Sprague in several respects but is immediately set apart by the unusually small size of its flowers, number of stamens, shape and pilosity of the sepals and several other floral characters.

Saurauia spinuligera R. E. Schultes, sp. nov.

Frutex, ut videtur gracilis. Rami robusti, teretes, usque ad 1 cm. in diametro, dense atque conspicuissime strigosi cum spinulis fulvo-aureis et sublignosulis, usque ad 5 mm. longis, fulvo vel fulvo-cinereo cum cortice obscure striato (spinulae ex mammis subconoidalibus circuitu ellipticis, cinereo-fulvis, conspicuis prorumpentes). Folia coriacea, lanceolato-elliptica vel obscure oblanceolato-elliptica, basi rotundata, apice abrupte acuminata, margine serrulata, usque ad 12.5 cm. longa, 4.5 cm. lata; lamina supra viridi vel pallida, glabra, nervis duodecim vel quattuordecim prominenter elevatis, fulvo-aureis, subremote strigillosis. Inflorescentiae ut videtur foliis plerumque aequales, graciles, pauciflorae. Bracteae minutae, lineares, glabre, usque ad 2 mm. longae. Flores perfecti non visi. Sepala (qui in fructu sicco persistant) quinque, crasso-membranacea, utrinque glabra, viva probabiliter flava, inaequalia; duo exteriora elliptica, apice valde rotundata, margine integra, 6-7 mm. longa, 4 mm. lata; tria interiora subovata, apice subacuta vel obtusa, margine aliquid undulata et fimbrillata, 9 mm. longa, 5 mm. lata, Fructus baccatus, subglobosus, 8-10 mm. in diametro, fulvus. Semina plurima, globosa, fulvo-aurea, 1.5 mm. in diametro, in muco inclusa; seminum testa durissima et dense papillata.

COLOMBIA: Departamento de Caldas, Cordillera occidental, Cerro Tatamá, alt. 2800-3300 m. "Mossy forest on spur. Shrub". September 8-10, 1922, *Francis W. Pennell 10452* (TYPE in Herb. Gray).

Without exception, *Saurauia spinuligera* is the most extraordinary species of the genus represented in Colombia. It is so ouststandingly different that I have had no hesitation in describing it as a new species on the basis of fruiting material without flowers. It is to be hoped that in the near future collections of flowering material of *Saurauia spinuligera* will be made on Cerro Tatamá. The structure of the flowers will indeed be of interest since the vegetative parts of the species are so striking.

Saurauia spinuligera apparently has no close allies among the known species of the New World. It is at once set apart from all others by the peculiar spinules on the branchlets. These spinules are somewhat woody, some as long as 5 mm., and grow from ashy yellow, elliptic-subconoidal mammae which are very conspicuous. All other American species of *Saurauia* which I know have tomentose, pilose, or strigillose branchlets, but none are armed with the stout spinules present in *S. spinuligera*. There are a number of other differences, such as the shape and texture of the leaves, the glabrous condition of both surfaces of the leaves and the shape and texture of the sepals, which, taken together, serve to set *Saurauia spinuligera* apart from all other Colombian species.

The presence of such an extraordinarily distinct species of *Saurauia* on Cerro Tatamá, which is, in fact, an island-mountain isolated from neighboring elevations, would seem to suggest that more interesting endemic species or varieties of this genus might be found there. It is my feeling that a thorough study of Cerro Tatamá during several seasons would add much of deep significance to our knowledge of the Colombian flora.

Saurauia ursina Triana et Planchon in Ann. Sci. Nat. Sér. 4, 18 (1862) 265.

Saurauia ursina is one of the most beautiful species of the genus in Colombia. The type was collected by Triana on the Río Negro in Antioquia where the tree is known by the common name "dulumoco". I have seen the following collections wich are unquestionably referable to this species: *Killip & Smith 19319* compared with authentic material at Paris by Dr. A. C. Smith, and *Bro. Ariste-Joseph A967* compared at Paris by Dr. E. P. Killip. According to field data on labels, *Saurauia ursina* varies from a shrub "2-3 m." (*Bro. Daniel 2120*) to a "tree 20 ft". tall (*Archer 1089*).

COLOMBIA: Departamento de Santander, Vicinity of Charta, forest, alt. 2000-2600 m., February 1-11, 1927, *E. P. Killip & A. C. Smith 19319* (U. S. Nat. Herb.; Herb. Gray).

Departamento de Antioquia. La Ceja, December 6, 1939, *Bro. Daniel 2120* (U. S. Nat. Herb. 1778821).

Departamento de Antioquia, Medellín, La Sierra, alt. 2000 m., *W. A. Archer 1089* (U. S. Nat. Herb. 1497398).

Departamento de Boyacá, Chiquinquirá, July, 1909, *Bro. Ariste-Joseph A967* (U. S. Nat. Herb. 1185041).